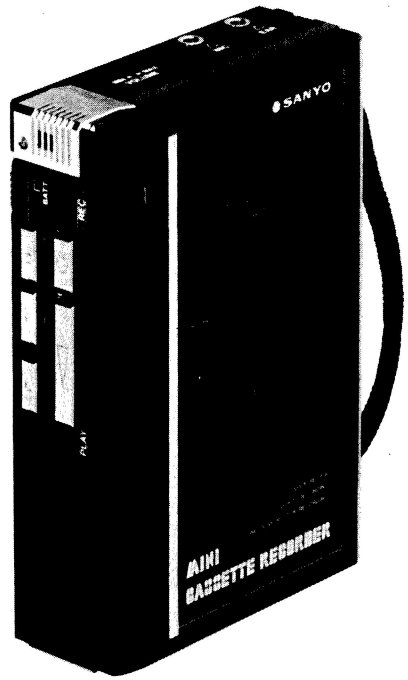
SERVICE MANUAL

SANYO

MINI CASSETTE RECORDER

M1112



142 431 25 (Black)
142 431 35 (Silver)

SPECIFICATIONS

Power Source	
DC	3V
(UM-3,HP 7, AA Cell, Mignonzelle, R6) x 2	
Output Power	350mW (Max.)
Current Consumption (at Vol. Min.)	
Record mode	160mA
Playback mode	160mA
Fast Forward/Rewind mode	250mA
Track System	2 Track/Mono
Recording System	DC Bias
Erasing System	Magnet Erasing
Tape Speed	1-7/8ips. ±3%
Torque	
Playback mode	30 ~ 50g-cm
Fast Forward/Rewind mode	more than 60g-cm
Fast Forward/Rewind Time	120sec. (with C-60)
Wow & Flutter	0.5%, RMS
Frequency Response (Overall)	
10dB Band	200Hz ~ 6,000Hz
Erase Ratio (Overall)	40dB
Signal to Noise Ratio	30dB
Crosstalk	
Track to Track	60dB
Harmonic Distortion (K3)	13%
Hum & Noise (at Vol. Min.)	−60dBs
Terminal Impedance	
MIC.	0.3mV/6.8kΩ
Earphone	200mV/4Ω load
Dimensions	86.5(W) x 127.5(H) x 36.5(D)mm
Weight (w/o battery)	270g

−Specifications subject to change without notice.−

WM-16375

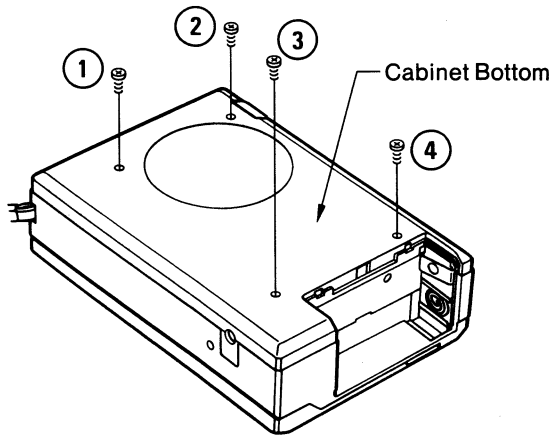
DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

- Before disassembling the unit, spread a soft rubber mat or a cloth on the workbench to avoid scratches and grease stains.
- Do not use a material which is likely to cause static electricity because the transistors and ICs may be easily damaged by it.
- When mounting the P.C.Board, confirm that the leads, resistors, capacitors, etc., do not contact the function mechanism such as gear or belt. Also refer to the Exploded Views.
- Reassemble the unit, noting the kinds of screws, the soldering and arrangement of the leads. Refer to "Circuit Diagram and Exploded Views" for correct assembly.
- Before disassembling the unit, take out the cassette tape and the batteries.

CABINET BOTTOM REMOVAL

1. Remove the four screws (1 ~ 4) fastening the Cabinet Bottom.

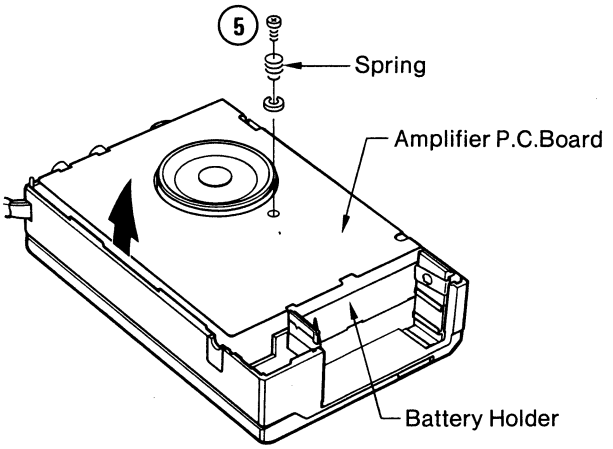


2. Detach the Cabinet Bottom by lifting it.
3. Reassemble in reverse order.

   NOTE:
   When the Cabinet Bottom is reassembled, fit the Pause Knob to the Pause Switch and then confirm that the Pause Switch is operated correctly by moving its knob.

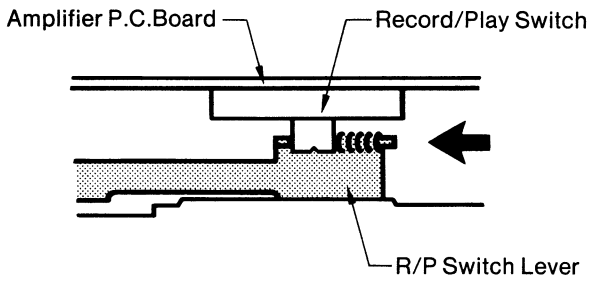
AMPLIFIER P.C.BOARD REMOVAL

1. Detach the Cabinet Bottom by following the instructions for it and the two leads of the Motor (red and blue) from the P.C.Board.
2. Take out the Speaker and the Speaker Holder from the unit and then detach the Spring for grounding by removing the screw (5).



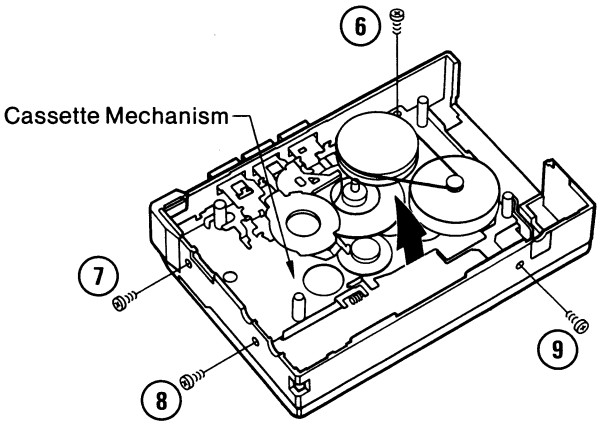
3. Detach the P.C.Board by lifting it in the direction of the arrow with caution not to damage the lead wires.
4. Reassemble in reverse order.

   NOTE:
   When the Amplifier P.C.Board is reassemble, attach the Record/Play Switch to the R/P Switch Lever correctly.



CASSETTE MECHANISM REMOVAL

1. Detach the Amplifier P.C.Board by following the instructions for it and remove the four screws (6 ~ 9) fastening the Cassette Mechanism.



2. Lift the Mechanism in the direction of the arrow as illustrated and detach the mechanism after the counter reset button is removed by pushing it into the Cabinet.
3. Reassemble in reverse order.

ADJUSTMENT PROCEDURES

GENERAL REMARKS

- Before the adjustments, wipe off stains on the tape contacting surfaces of the parts and the belt with a soft cloth soaked in alcohol. Trouble may occur because of oil and grease stains. Carefully handle the belt because grease easily attaches to it.

REQUIRED EQUIPMENT

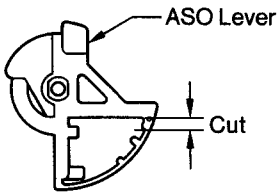
- VTVM
- Frequency Counter
- DC Constant-voltage Regulator
- Dummy Load (4Ω)
- Test Tape
  - ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - ‡ 8kHz Test Tape (Example: TEAC MTT-113C) for Head Azimuth Adjustment
- Alignment Tool

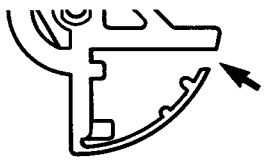
NOTE:
Before performing the adjustment, set the control and switch as follows:

- ‡ Volume Control ..... As desired
- ‡ Speed Control ..... click position (0)
- ‡ Supply 3.0V DC from the voltage regulator to the Ext. Power Jack.

ASO LEVER

The service part of the ASO Lever is not cut to avoid deforming as illustrated.
When replacing the ASO Lever, cut the part indicated in the illustration.



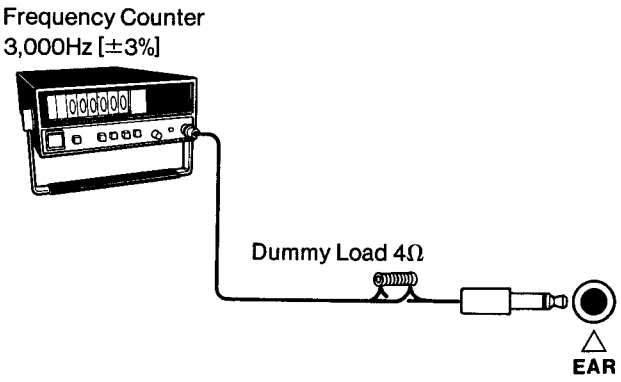


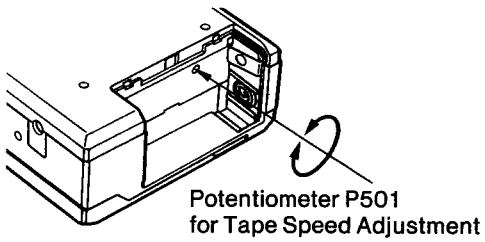
TAPE SPEED ADJUSTMENT

1. Open the Battery Compartment Lid and connect the frequency counter to the earphone jack as illustrated.

   Then insert the 3kHz test tape into the cassette compartment.

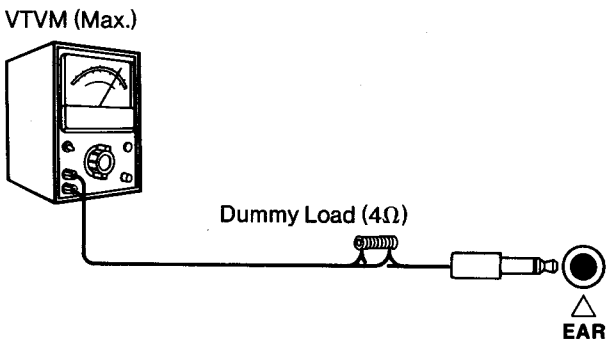
2. While playing back the test tape, adjust the tape speed by turning the potentiometer P501 on the P.C.Board as illustrated until the frequency counter reads 3,000Hz [±3%].

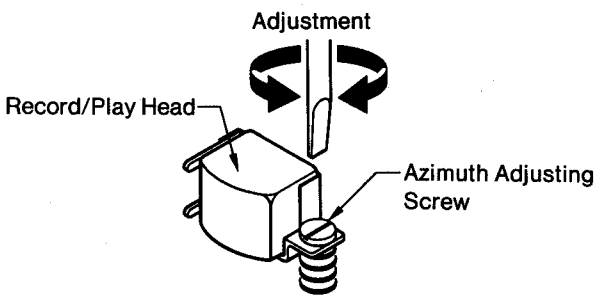




HEAD AZIMUTH ADJUSTMENT

1. Connect the VTVM to the earphone jack as illustrated and insert the 8kHz test tape into the cassette compartment.





2. While playing back the test tape, turn the azimuth adjusting screw until the VTVM reads the maximum.

3. After the adjustment, secure the adjusting screw with paint or glue.

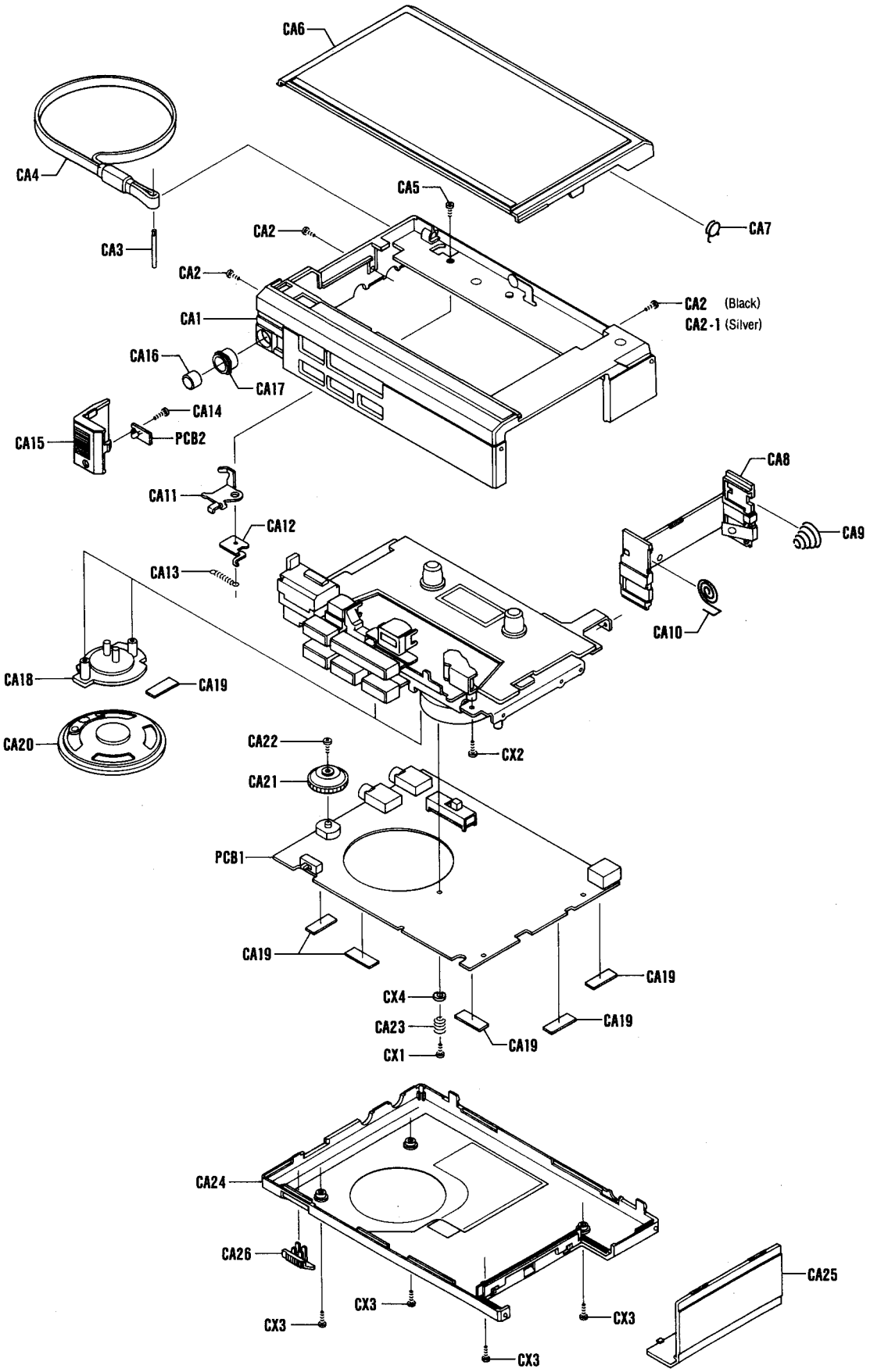
PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141-6-1419-86901	Individual Carton (Black)	1
	141-6-1419-86903	Individual Carton (Silver)	1
	141-6-1469-14200	Case Styrofoam	1
	141-6-2519-12090	Poly Cover	1
	141-6-3919-52600	Plain Pad	1
	141-6-4559-03305	Serial No. Sheet	3
	ACCESSORIES		
	4-2419-70982	Cassette	1
	142-6-4119-32852	Instruction Book	1
	CABINET		
CA1	141-0-1129-18402	Cabinet Top Assy (Black)	1
CA1	141-0-1129-18404	Cabinet Top Assy (Silver)	1
CA2	141-2-4219-10501	Screw, +M1.7x3.0 (Black)	3
CA2	141-2-4219-10501	Screw, +M1.7x3.0 (Silver)	2
CA2	141-2-4219-10502	Screw, +M1.7x3.0 (Silver)	1
CA3	141-2-2719-17000	Shaft Handle	1
CA4	141-2-1769-04600	Hand Strap	1
CA5	141-2-4219-28401	Screw, Pan Hd., +M1.4x2.5 (Black)	1
CA5	141-2-4219-28400	Screw, Pan Hd., +M1.4x2.5 (Silver)	1
CA6	141-0-1249-38900	Lid Cassette Assy (Black)	1
CA6	141-0-1249-38902	Lid Cassette Assy (Silver)	1
CA7	141-2-8549-17201	Spring Eject	1
CA8	141-0-1149-15000	Case Battery Assy (Black)	1
CA8	141-0-1149-15002	Case Battery Assy (Silver)	1
CA9	141-2-3829-44900	Spring Battery	1
CA10	141-2-3829-45000	Spring Battery	1
CA11	141-2-8419-15400	Interlock Lever	1
CA12	141-2-3519-74600	Holder Interlock	1
CA13	141-2-8549-33200	Spring	1
CA14	141-2-4219-21801	Screw, +M1.7x3.0	1
CA15	141-2-1519-49100	Cap Mike	1
CA16	4-1539-70721	Microphone [BM1]	1
CA17	141-2-3899-15800	Holder Microphone	1
CA18	141-2-3729-05000	Holder Speaker	1
CA19	141-2-4469-34602	Cushion	6
CA20	4-1519-72256	Speaker (4Ω) [SP1]	1
CA21	141-2-1639-62900	Knob Volume	1
CA22	141-2-4219-42600	Screw, +M1.4x3.5	1
CA23	141-2-8559-11100	Spring Earth	1
CA24	141-0-1129-18500	Cabinet Bottom Assy (Black)	1
CA24	141-0-1129-18501	Cabinet Bottom Assy (Silver)	1
CA25	141-2-1339-37700	Lid Battery (Black)	1
CA25	141-2-1339-37701	Lid Battery (Silver)	1
CA26	141-2-1649-41100	Knob Pause	1
CX1	128-3-1317-04014	PI Screw-3, Pan Hd., +M1.7x4.0	1
CX2	128-3-1317-05013	PI Screw-3, Pan Hd., +M1.7x5.0	1
CX3	128-3-1317-06018	PI Screw-3, Pan Hd., +M1.7x6.0 (Black)	4
CX3	128-3-1317-06014	PI Screw-3, Pan Hd., +M1.7x6.0 (Silver)	4
CX4	110-3-2101-70013	Spring Washer-2, M1.7	1
PCB1	141-0-1939-14080	Amplifier P.C.B. Assy	1
PCB2	141-0-1939-15050	LED P.C.B. Assy	1

NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

CABINET EXPLODED VIEW



MECHANISM PARTS LIST

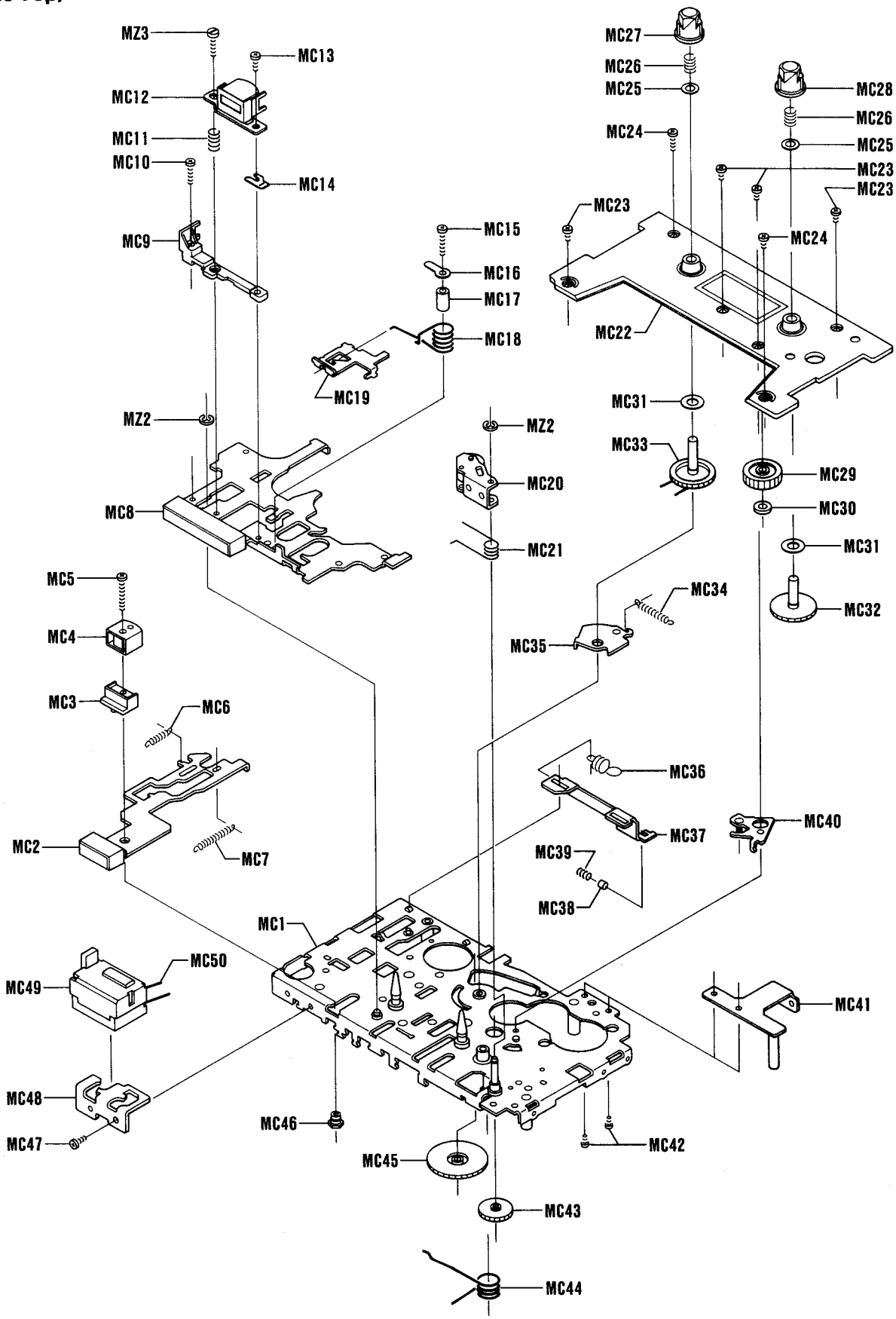
Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
MC1	141-0-3119-25202	Chassis Assy	1
MC2	141-0-7319-31601	Rod Record Assy	1
MC3	141-2-3529-45900	Spacer Erase Head	1
MC4	4-2429-71241	Erase Head [HD2]	1
MC5	141-2-4219-06602	Screw, +M2.0x11.0	1
MC6	141-2-8549-29200	Spring Rod Record	1
MC7	141-2-8549-29400	Spring Lever Lock Record	1
MC8	141-0-7319-31201	Base Slide Assy	1
MC9	141-2-3529-45800	Speacer Head	1
MC10	141-2-4219-04000	Screw, +M2.0x6.0	1
MC11	141-2-8549-32300	Spring Head	1
MC12	4-2429-72780	R/P Head [HD1]	1
MC13	141-2-4219-02900	Screw, +M2.0x4.0	1
MC14	141-2-3529-18100	Spacer Head	1
MC15	141-2-4219-03600	Screw, +M2.0x8.0	1
MC16	141-2-4729-01902	Lug	1
MC17	141-2-7539-66000	Post Spring Base	1
MC18	141-2-8529-24600	Spring Base Slide	1
MC19	141-2-7319-64700	Plate Slide Base	1
MC20	141-0-5459-02302	Arm Pinchrol Assy	1
MC21	141-2-8529-24700	Spring Arm Pinchrol	1
MC22	141-2-3119-23201	Cover Chassis (Black)	1
MC22	141-2-3119-23200	Cover Chassis (Silver)	1
MC23	141-2-4219-10802	Screw, +M2.0x2.5 (Black)	4
MC23	141-2-4219-10803	Screw, +M2.0x2.5 (Silver)	4
MC24	141-2-4219-02903	Screw, +M2.0x4.0 (Black)	2
MC24	141-2-4219-02904	Screw, +M2.0x4.0 (Silver)	2
MC25	141-2-4539-37800	Washer, M2.0x5.0x0.13	2
MC26	141-2-8559-11600	Spring Back Tension	2
MC27	141-2-5319-16500	Fin Reel Supply	1
MC28	141-2-5319-16300	Fin Reel Take-up	1
MC29	141-2-5519-61100	Gear Fastwind	1
MC30	141-2-5369-08200	Mold Ring	1
MC31	141-2-4539-41000	Washer, M3.3x6.0x0.13	2
MC32	141-2-5319-16200	Gear Reel Take-up	1
MC33	141-0-5319-09600	Gear Reel Assy	1
MC34	141-2-8549-31200	Spring Arm Fastwind	1
MC35	141-0-7439-18100	Arm Fastwind Assy	1
MC36	141-2-8549-28600	Spring Rod R/P Switch	1
MC37	141-2-7319-74100	Rod R/P Switch	1
MC38	141-2-4619-08600	Tube	1
MC39	141-2-8559-10700	Spring R/P Switch	1
MC40	141-0-7439-18000	Arm Take-up Assy	1
MC41	141-0-2149-03500	Bracket Assy	1
MC42	141-2-4219-15402	Screw, +M1.7x2.0	2
MC43	141-2-5519-60900	Gear Take-up	1
MC44	141-2-8529-24500	Spring Plate Slide Base	1
MC45	141-2-5519-61000	Gear Rewind	1
MC46	141-2-7539-64500	Pin Rod Record	1
MC47	141-2-4219-09000	Screw, +M2.0x2.0	1
MC48	141-2-8139-12300	Bracket Counter	1
MC49	141-2-8119-14101	Counter	1
MC50	141-2-5649-25400	Belt Counter	1
MC51	141-2-4539-27601	Washer, M2.1x3.5x0.13	2
MC52	141-0-5219-11700	Flywheel Compl	1
MC53	141-2-5649-28000	Belt Drive	1
MC54	141-2-8529-24900	Spring Rod Stop	1
MC55	141-2-4539-19502	Washer, M3.55x5.5x0.25	1
MC56	141-0-5519-11600	Friction Assy	1
MC57	141-2-4539-38200	Washer, M2.6x4.7x0.4	1
MC58	141-2-8529-25000	Spring Lever ASO	1
MC59	141-2-7419-95200	Lever ASO	1
MC60	4-5279-71550	Motor [M1]	1
MC61	141-2-7319-74200	Rod Switch Leaf	1
MC62	141-0-7319-31501	Rod Stop Assy	1
MC63	141-0-7319-31401	Rod Fast Assy	1
MC64	141-2-8549-28700	Spring Rod F.FWD	1
MC65	141-2-8549-28800	Spring Rod Rewind	1
MC66	141-0-7319-31301	Rod Rewind Assy	1
MC67	141-2-8549-29300	Spring Rod Switch Leaf	1
MC68	141-2-7419-95100	Lever Cue Review	1
MC69	141-2-7419-95000	Lever Rewind	1
MC70	141-2-7419-94900	Lever Lock Record	1
MC71	141-2-7319-65200	Plate Lock	1
MC72	141-2-8529-24800	Spring Plate Lock	1
MC73	141-2-3529-51300	Spacer Cushion Motor	2
MC74	141-2-4459-24900	Cushion Motor	2
MC75	141-2-4579-04400	E Ring	1
MC76	141-2-4539-27603	Washer, M2.1x3.5x0.25	1
MZ1	112-3-1301-20082	E Ring, M1.2	4
MZ2	112-3-1301-50082	E Ring, M1.5	3
MZ3	101-3-2502-00711	Screw, Cylinder Hd., -M2.0x7	1
MZ4	127-3-1217-03518	PI Screw-1, Flat Hd., +M1.7x3.5 (Black)	2
MZ4	127-3-1217-03513	PI Screw-1, Flat Hd., +M1.7x3.5 (Silver)	2

NOTE:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

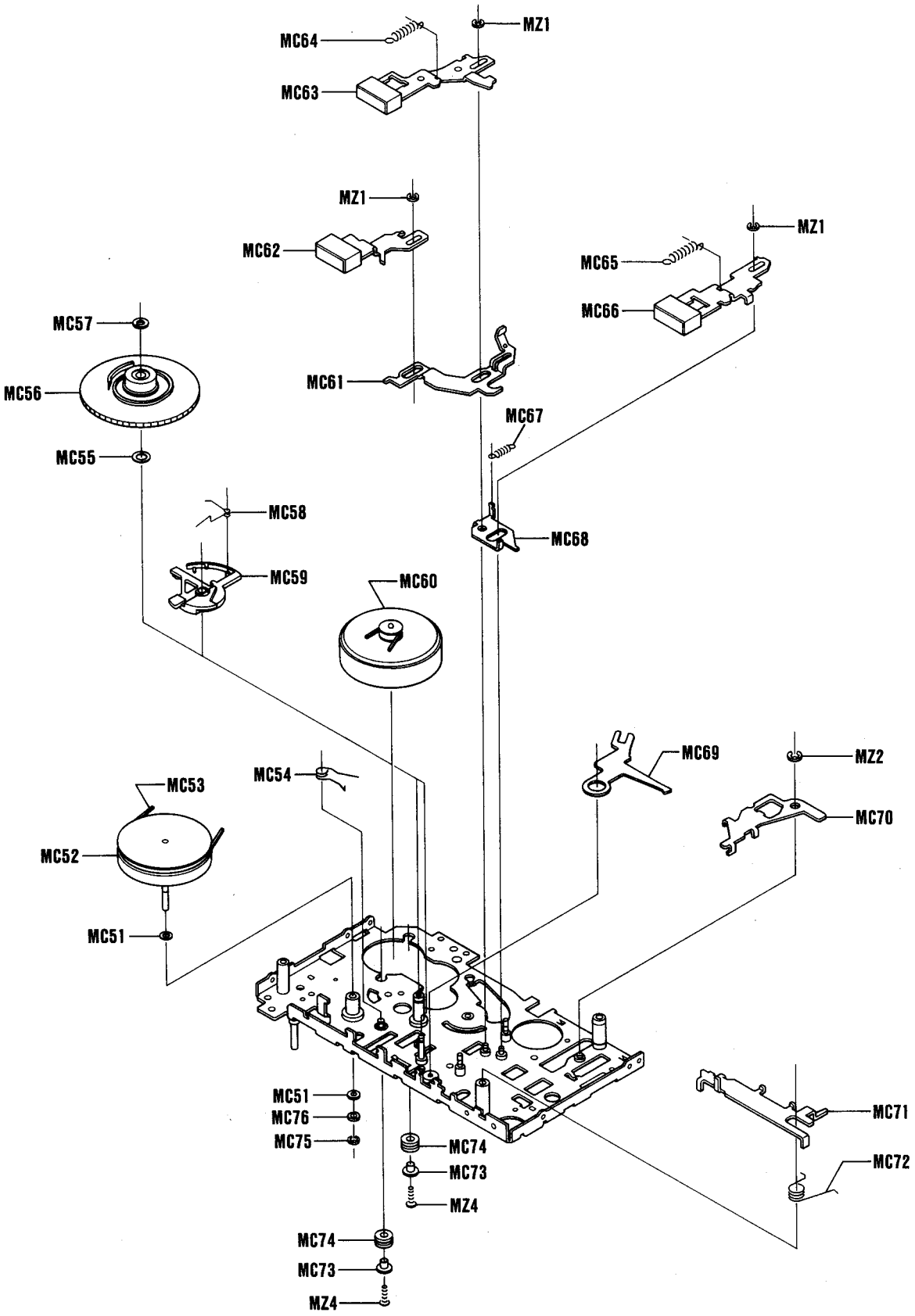
MECHANISM EXPLODED VIEW

(Chassis Top)



MECHANISM EXPLODED VIEW(Continued)

(Chassis Bottom)



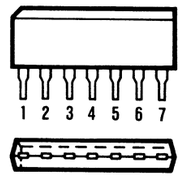
P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description			Q'ty
	AMPLIFIER P.C.B. ASSY				
PCB1	141-0-1939-14080	Amplifier P.C.B. Assy			1
J1	4-2359-77590	Jack 3P (Microphone)			1
J2	4-2359-77590	Jack 3P (Earphone)			1
J3	4-2359-78080	Ext. Power Socket			1
S1	4-2319-73645	Slide Switch (RECORD/PLAY)			1
S2	4-2319-74490	Leaf Switch (POWER)			1
S3	4-2319-75811	Slide Switch (PAUSE)			1
P501	4-2229-76480	Potentiometer (B-2.2kΩ)			1
VR1	4-2229-76490	Volume (A-30kΩ)			1
D101	4-2029-71851	Diode, 2 OA 90 A			1
D102	4-2029-71851	Diode, 2 OA 90 A			1
IC101	4-2069-71241	IC, TA 7330 P			1
IC102	4-2069-75050	IC, TA 7376 P			1
IC501	207-5-1895-52310	IC, LA 5523			1
C101	CM3-3-3500-K00MV	Mylar	0.033μF	50V ±10%	1
C102	CM3-3-3500-K00MV	Mylar	0.033μF	50V ±10%	1
C103	CD2-2-6100-0001V	Electrolytic	22μF	10V	1
C104	CD1-0-5500-0001V	Electrolytic	1μF	50V	1
C105	CC4-7-1500-KE00C	Ceramic	470pF	50V ±10%	1
C106	CC2-2-2500-KE00C	Ceramic	0.0022μF	50V ±10%	1
C107	CD4-7-663A-0001V	Electrolytic	47μF	6.3V	1
C108	CD2-2-5500-0001V	Electrolytic	2.2μF	50V	1
C109	CD1-0-5500-0001V	Electrolytic	1μF	50V	1
C110	CC1-0-3500-KE00C	Ceramic	0.01μF	50V ±10%	1
C111	CD4-7-763A-0001V	Electrolytic	470μF	6.3V	1
C112	CD3-3-663A-0001V	Electrolytic	33μF	6.3V	1
C113	CD4-7-4500-0001V	Electrolytic	0.47μF	50V	1
C114	CC4-7-2500-KE00C	Ceramic	0.0047μF	50V ±10%	1
C115	CD3-3-5500-0001V	Electrolytic	3.3μF	50V	1
C116	CD2-2-6100-0001V	Electrolytic	22μF	10V	1
C117	CC1-0-3500-KE00C	Ceramic	0.01μF	50V ±10%	1
C118	CA1-0-5100-M000V	Aluminum	1μF	10V ±20%	1
C119	CD4-7-763A-0001V	Electrolytic	470μF	6.3V	1
C120	CC6-8-2500-KE00C	Ceramic	0.0068μF	50V ±10%	1
C501	CD2-2-5500-0001V	Electrolytic	2.2μF	50V	1
C502	CD2-2-6100-0001V	Electrolytic	22μF	10V	1
R101	RP3-3-2121-JH000	Carbon	3.3kΩ	1/8W ±5%	1
R102	RP3-3-1121-JH000	Carbon	330Ω	1/8W ±5%	1
R103	RP6-8-2121-JH000	Carbon	6.8kΩ	1/8W ±5%	1
R104	RP2-2-2121-JH000	Carbon	2.2kΩ	1/8W ±5%	1
R105	RP1-2-3121-JH000	Carbon	12kΩ	1/8W ±5%	1
R106	RP3-9-1121-JH000	Carbon	390Ω	1/8W ±5%	1
R107	RP1-5-3121-JH000	Carbon	15kΩ	1/8W ±5%	1
R108	RP1-5-3121-JH000	Carbon	15kΩ	1/8W ±5%	1
R109	RP1-2-4121-JH000	Carbon	120kΩ	1/8W ±5%	1
R110	RP3-3-1121-JH000	Carbon	330Ω	1/8W ±5%	1
R111	RP6-2-2121-JH000	Carbon	6.2kΩ	1/8W ±5%	1
R112	RP1-0-2121-JH000	Carbon	1kΩ	1/8W ±5%	1
R113	RP2-2-A121-JH000	Carbon	2.2Ω	1/8W ±5%	1
R114	RP3-3-0121-JH000	Carbon	33Ω	1/8W ±5%	1
R201	RH1-0-0501-JH000	Metal	10Ω	1/2W ±5%	1
R202	RP3-3-2121-JH000	Carbon	3.3kΩ	1/8W ±5%	1
R203	RP3-3-1121-JH000	Carbon	330Ω	1/8W ±5%	1
R501	RP3-3-1121-JH000	Carbon	330Ω	1/8W ±5%	1
R502	RP3-9-2121-JH000	Carbon	3.9kΩ	1/8W ±5%	1
R503	RP3-3-2121-JH000	Carbon	3.3kΩ	1/8W ±5%	1
R504	4-2219-71550	Resistor	1.5kΩ		1
	LED P.C.B. ASSY				
PCB2	141-0-1939-15050	LED P.C.B. Assy			1
	4-2262-25980	PCB LED			1
D201	4-2029-71970	LED, SLP 102 B (BATTERY)			1

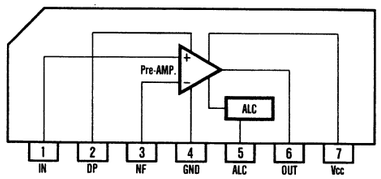
NOTE:
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

IC & TRANSISTOR LEAD IDENTIFICATION

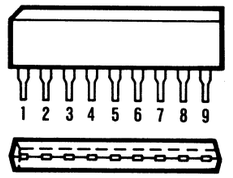
TA7330P FRONT/BOTTOM VIEWS



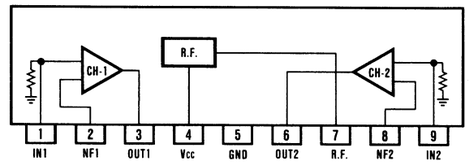
TA7330P BLOCK DIAGRAM



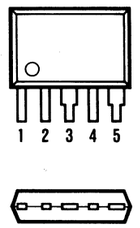
TA7376P FRONT/BOTTOM VIEWS



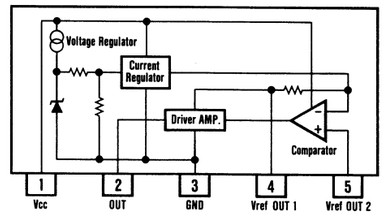
TA7376P BLOCK DIAGRAM



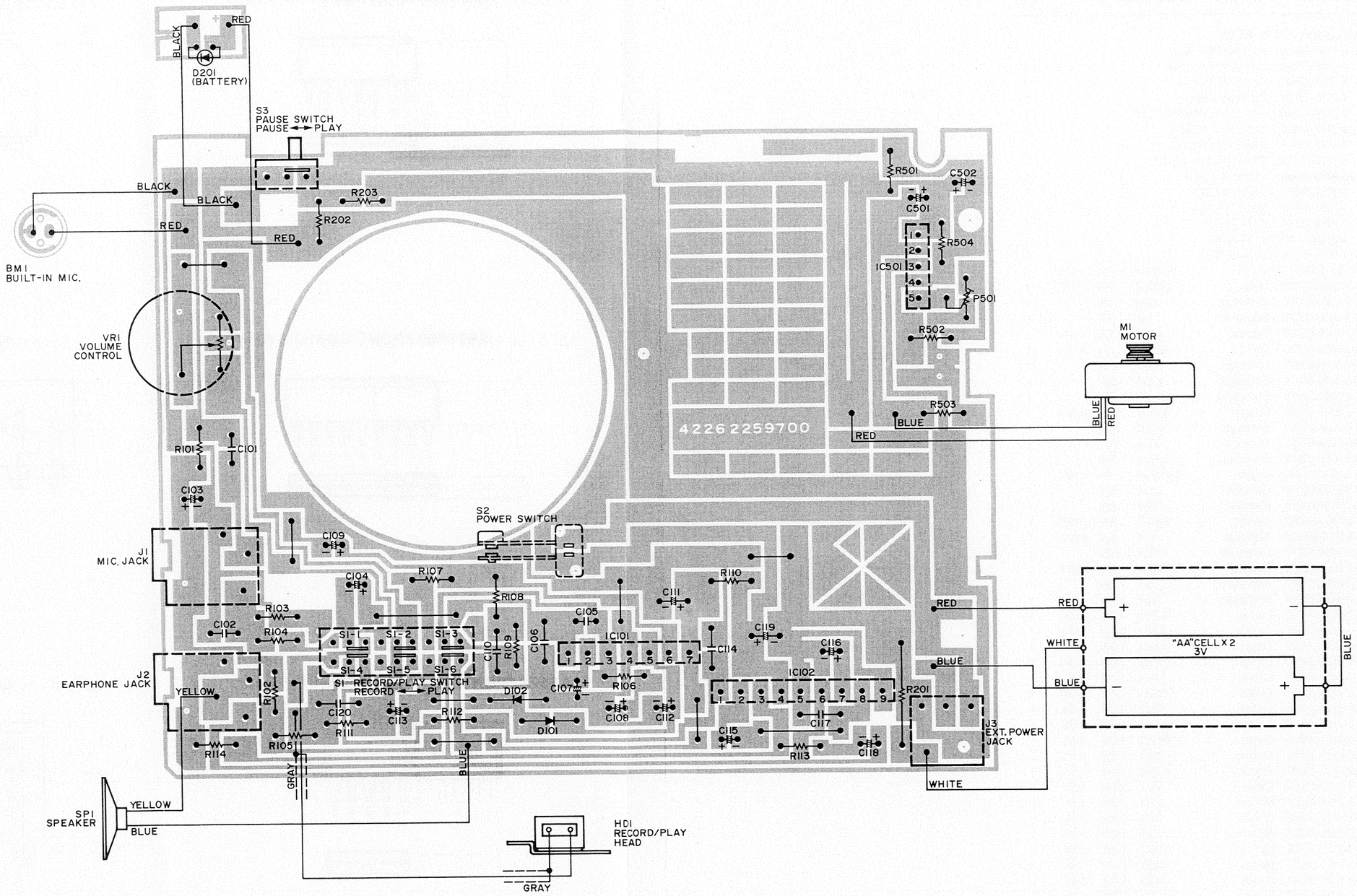
LA5523 FRONT/BOTTOM VIEWS



LA5523 BLOCK DIAGRAM



AMPLIFIER P.C.BOARD & WIRING DIAGRAM



IC101

	1	2	3	4	5	6	7
Playback	1.3	1.3	1.3	0	0	1.4	2.7

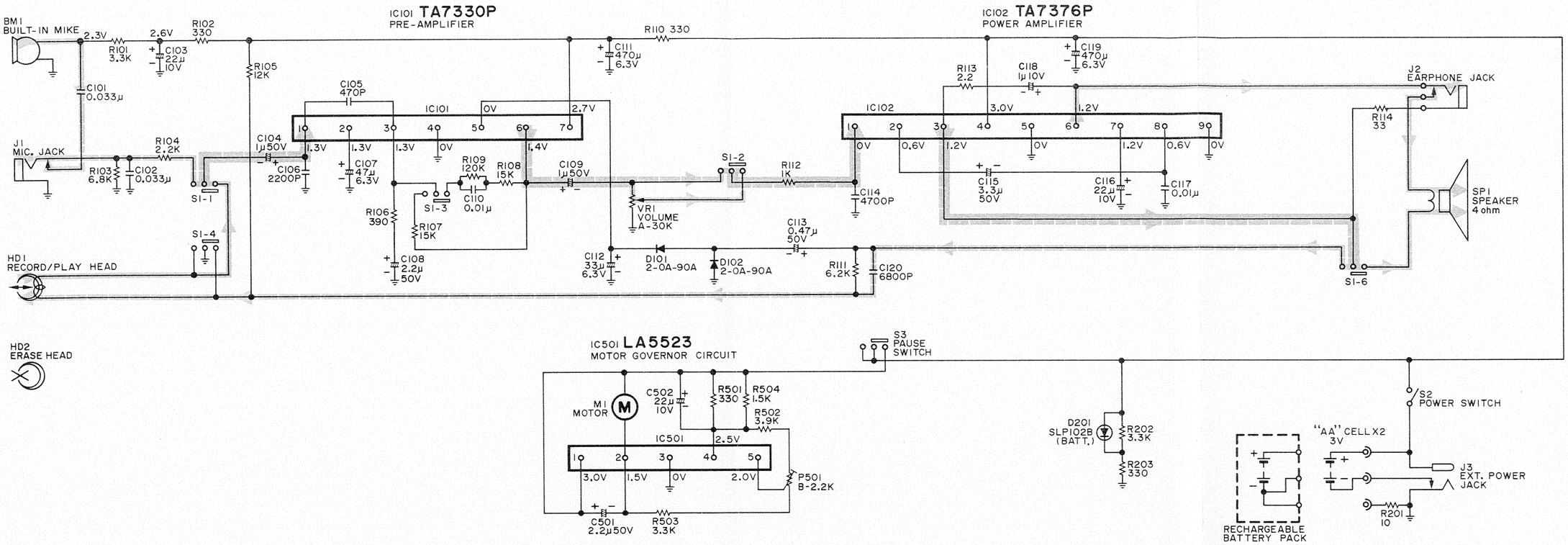
IC501

	1	2	3	4	5
Playback	3.0	1.5	0	2.5	2.0

IC102

	1	2	3	4	5	6	7	8	9
Playback	0	0.6	1.2	3.0	0	1.2	1.2	0.6	0

SCHEMATIC DIAGRAM



Signal flow of **PLAY**

Signal flow of **RECORD**

No.	Name	Position
S1	Record/Play Switch	PLAY
S2	Power Switch	OFF
S3	Pause Switch	PLAY